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EXAMINER	
WEI, ZHENG	
ART UNIT	PAPER NUMBER
2192	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/849,294	PLANTE, FREDERIC	
	Examiner	Art Unit	
	ZHENG WEI	2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 October 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Remarks

1. In view of the Pre-Appeal Brief Request filed on 10/01/2009, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

   To avoid abandonment of the application, appellant must exercise one of the following two options:

   (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

   (2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

2. A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

3. The 35 U.S.C. § 102(b) rejection to claims 1, 2, 4 and the 35 U.S.C. § 103 rejection to claim 3 are withdrawn in view of Applicant's arguments.

4. Claims 1-4 remain pending and have been examined.

Response to Arguments

5. Applicant's arguments filed on 10/01/2009, in particular on pages 6-9, have been fully considered but they are not persuasive in view a new ground of rejection:

- At page 7, first paragraph, the Appellant submits that "Zgarba does not address, either in the cited figure and text or elsewhere in the disclosure, a situation in which both artifacts (i.e., the software model and the software code) are changed independently between synchronizations (i.e., "concurrent modified") and how to subsequently synchronize the changed software model and the changed software code. Thus Zgarba does not teach or suggest 'each artifact being modified independent of a modification to the other artifact after a last synchronization.'". Examiner agrees that Zgarba discloses a method to synchronize "source code" with the modified "software model", but does not explicitly disclose synchronizing two "source code" and "software model" that are both modified. However, Examiner's position is that present application as disclosed are merely a three steps synchronization process wherein (see applicant's fig.3) the first step is synchronizing "Model v1" (14) with modified "Code v4" (18) and the second step is to merge the synchronized model (30) with the latest "Model v3" to generate merged model "Model v4", and then last step converts to "Code v5" in different format. It can be seen that, the first step is similar to Zgarba which synchronizes one type of artifact (source code) with another modified type of artifact (software model). Thus at least one artifact (software model) can be modified independently which is merged with another

artifact. The key point is that there is no much difference to merge the artifacts that can be modified or not. The purpose of merging/synchronization is to combine all the elements in all the artifacts user want to perform synchronization, as disclosed in Fig.3, "model v1" synchronizes with "code v4" and then merges with latest "Model v3" and the final synchronized "Model v4" comprises all elements in "Code v4", "Model v1" and "Model v3". Zgarba's disclosure as in Fig.4, Fig.9C and related text, presents the same feature to including all elements in software model and software code. The second step is a general merging step which merges two artifacts both in the same format and the third step is simply converting to the same artifact to different format which is also equivalent to Zgarba (e.g. Fig.4, source code and software model conversion).

- At page 7, third paragraph, the Appellant points out that generic meta-model disclosed in Zgarba should not be interpreted to be the temporary artifact recited in claim 1. Because "the temporary artifact has elements from a version of the first artifact and elements from a version of the second artifact transformed as the first artifact". However, Examiner's position is that Zgarba's meta-model as illustrated in Fig.9C contains all the elements in code version and model version which are both in the model format (meta-model) (see for example, Fig.9A transformed meta-model version of the software code, fig.9B meta-model version of the software model, Fig.9C updated meta-model including both software code and model elements in the meta-model format).

Therefore, the updated/generated meta-model in Fig.9C is the same as temporary artifact as recited in claim 1.

- At page 8, second paragraph, the Appellant submits that col.4, lines 35-45 of Zgarba describes a standard merging process that does not rely on appellant's recited temporary artifact or an equivalent. Examiner agrees that Zgarba does not explicitly disclose using the updated/merged meta-model (temporary artifact) to further merge with another meta-model. However, Examiner's position is that Zgarba discloses an example about merging (two meta-models Fig.9A, Fig.9B) to generate the updated meta-model (Fig.9c) in order to include all the elements and/or difference in both meta-models. Therefore, it would have been obvious to one having ordinary skill in the art to generate an updated meta-model which is merged with other meta-models to further incorporate the latest updated or modified elements for the purpose of synchronization as suggested by Zgarba.
- At page 8, third paragraph, the Appellant submits that no teaching or suggestion is presented to show the reverse engineering being applied to artifacts that are independently modified after a last synchronization. However, it should be noted that reverse engineering as recited is merely for the purpose of merging two different artifacts that both are required in the same format. Zgarba discloses a version of software code and a version of software model are converted (reverse or forward engineering) to meta-models (fig.9A and fig.9B) wherein at least one artifact (software model) is independently modified

by adding "doThat(): void" (see for example, Fig.9B).Therefore, as Zgarba disclosed by using reverse engineering to convert both software code and model to meta-models, it is obvious that such reverse engineering can be applied to any artifacts including independently modified to generate the meta-model for the purpose of merging or synchronization as suggested by Zgarba.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1, 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zgarba (US 6,502,239 B2)

Claim 1:

Zgarba discloses a method for synchronizing a first artifact (source code) and a second artifact (software model), the first and second artifacts being interdependent and one of the artifacts being modified independent of a modification to the other artifact after a last synchronization (see for example, Fig. 4 and related text), the first and second artifacts each having a plurality of elements and being of different formats (C++ and CDIF), the method comprising:

- Performing a forward engineering operation to generate a temporary artifact (meta-model) having all the elements of a last synchronized version of the first artifact and having all the elements of a latest version of the second artifact transformed as the first artifacts (*Fig.9A, 9B, 9C and related text*)
- merging the temporary artifact to create a synchronized version of the first artifact (*see for example, fig.9C and related text, also see col.7, lines 2-5, "…merging the data in the software model 2 with any existing source code 4, adding new code, changing code or removing code when necessary to create new source code 8"; also see col.4, lines 35-45*); and
- performing a reverse engineering operation to generate a synchronized version of the second artifact having all the elements of the latest version of the second artifact and having all the elements of the synchronized version of the first artifact transformed as the second artifact (*see for example, Fig.4, step 10, generating software model from newly generated source code; also see col.3, line 67- col.4, line 3, "…permit generation of software models from source code using various different modeling methodologies and also permit the engraftation of source code from the software model"*)

but does not explicitly disclose each artifact being modified independently or merging the temporary artifact and a latest version of the first artifact. However, Zgarba discloses synchronizing the two artifacts, one can be modified independently (software model) and another (software code) (see for example, Fig.9B, fig.9C and related text). However, it would have been obvious to one

having ordinary skill in the art that such synchronization is for the purpose of including all the elements in the two artifacts and thus Zgarba's for synchronization can be used to synchronize any artifacts including those can be independently modified. Zgarba also discloses merging the meta-model of the software code (Fig.9A) and meta-model of the software model (Fig.9B) to incorporate all changes of the latest version of the software model to create an updated meta-model (Fig.9C). Therefore, it would have been obvious to one having ordinary skill in the art to further incorporate other latest changes of meta-model for the purpose of synchronization as suggested by Zgarba (see for example, col.2, lines 15-27).

Claim 2:

Zgarba also discloses the method/system of claim 1 wherein one of the first and second artifacts is a software model artifact (software model) and the other of the first and second artifacts is a code artifact (source code) (see for exampleFig.1, Fig.4, "Software Model", "source code" and related text)

Claim 4:

Zgarba also discloses the method of claim 2, wherein the code artifact is a 3GL source file. (see for example, col.3, lines 49-55, C++ programming language)

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zgarba (US 6,502,239 B2) in view of Iyengar (US 6,038,393)

Claim 3:

Zgarba discloses the method of claim 2, but does not explicitly disclose wherein the software model artifact is a Unified Modeling Language (UML) file. However, Iyengar in the same analogous art of transforming application into UML and/or UML models into application (*see for example, ABSTRACT, "The system also transforms legacy business processes, including legacy applications into UML format…The system also allows the reverse engineering and reverse transformation of UML models ...into application components"*). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the UML language to represent the software model in Zgarba. One would have been motivated to do so to standardize the model transformation with other object models as suggested by Iyengar (*see for example, col.3, and lines22-38, "UML is the result of an effort to create standardization in the various object-oriented methods"*)

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zheng Wei whose telephone number is (571) 270-1059 and Fax number is (571) 270-2059. The examiner can normally be reached on Monday-Thursday 8:00-15:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Zheng Wei/
Examiner, Art Unit 2192

/Tuan Q. Dam/
Supervisory Patent Examiner, Art Unit 2192